



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.10 GHz, Intel Xeon Gold 5318N)

SPECspeed®2017_fp_base = 209

SPECspeed®2017_fp_peak = 209

CPU2017 License: 9016

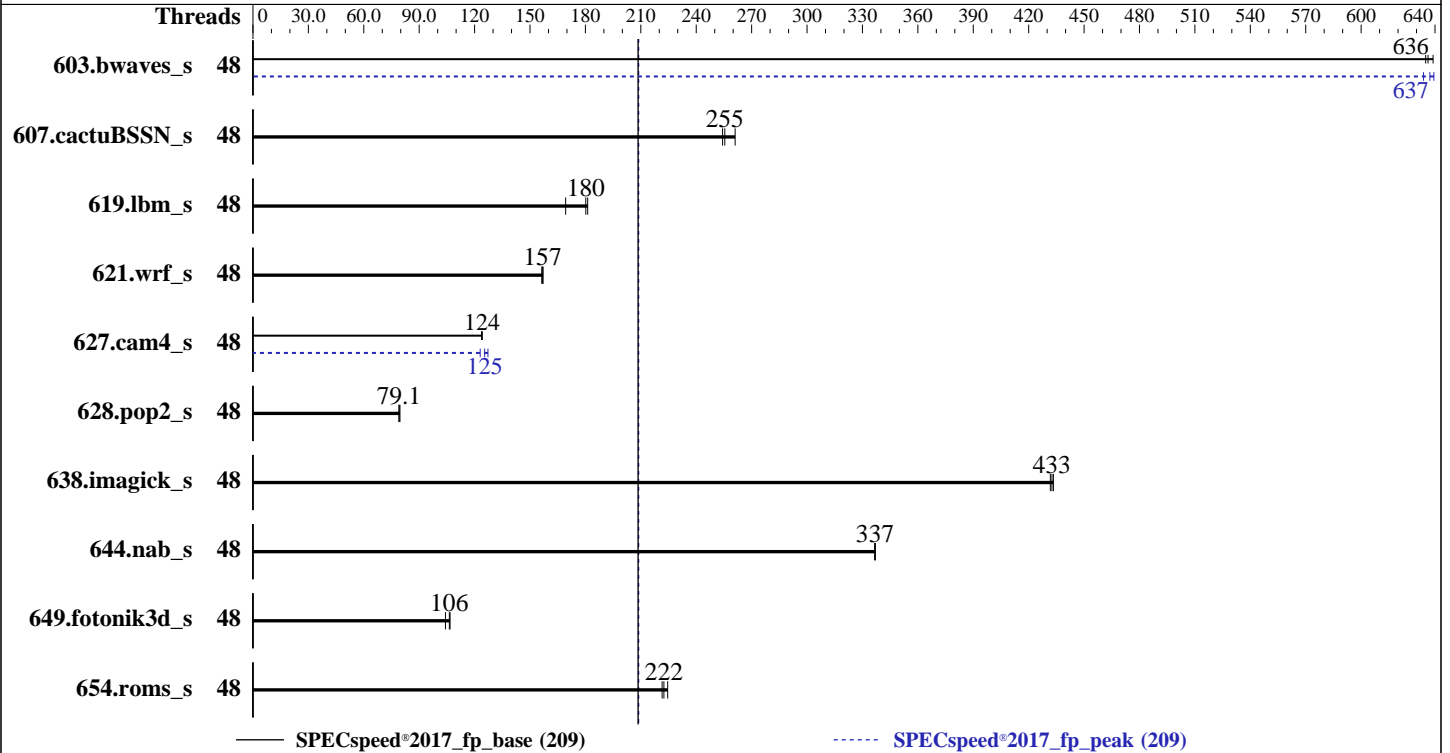
Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2022

Hardware Availability: Apr-2022

Software Availability: May-2022



Hardware

CPU Name: Intel Xeon Gold 5318N
 Max MHz: 3400
 Nominal: 2100
 Enabled: 48 cores, 2 chips
 Orderable: 1, 2 chip(s)
 Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 1.25 MB I+D on chip per core
 L3: 36 MB I+D on chip per chip
 Other: None
 Memory: 1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R, running at 2666)
 Storage: 1 x 1 TB SATA SSD
 Other: None

Software

OS: Red Hat Enterprise Linux release 8.4 (Ootpa) 4.18.0-305.25.1.el8_4.x86_64
 Compiler: C/C++: Version 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2022.1 of Intel Fortran Compiler for Linux;
 Parallel: Yes
 Firmware: Version 0802 released Apr-2022
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: jemalloc memory allocator V5.0.1
 Power Management: BIOS and OS set to prefer performance at the cost of additional power usage.



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.10 GHz, Intel Xeon Gold 5318N)

SPECSpeed®2017_fp_base = 209

SPECSpeed®2017_fp_peak = 209

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	48	92.7	636	92.3	639	92.9	635	48	92.6	637	92.3	639	93.1	634
607.cactuBSSN_s	48	63.9	261	65.3	255	65.6	254	48	63.9	261	65.3	255	65.6	254
619.lbm_s	48	29.1	180	30.9	169	28.9	181	48	29.1	180	30.9	169	28.9	181
621.wrf_s	48	84.6	156	84.2	157	84.3	157	48	84.6	156	84.2	157	84.3	157
627.cam4_s	48	71.5	124	71.4	124	71.6	124	48	70.6	125	69.7	127	72.0	123
628.pop2_s	48	150	79.1	150	79.1	149	79.6	48	150	79.1	150	79.1	149	79.6
638.imagick_s	48	33.4	432	33.3	433	33.3	433	48	33.4	432	33.3	433	33.3	433
644.nab_s	48	51.9	337	51.9	337	51.9	337	48	51.9	337	51.9	337	51.9	337
649.fotonik3d_s	48	87.5	104	85.7	106	85.4	107	48	87.5	104	85.7	106	85.4	107
654.roms_s	48	70.1	225	71.1	222	70.8	222	48	70.1	225	71.1	222	70.8	222

SPECSpeed®2017_fp_base = **209**

SPECSpeed®2017_fp_peak = **209**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
OS set to performance mode via cpupower frequency-set -g performance

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/ic22ul/lib/intel64:/home/ic22ul/je5.0.1-64"
MALLOCONF = "retain:true"
OMP_STACKSIZE = "192M"

General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Redhat Enterprise Linux 8.0
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3> /proc/sys/vm/drop_caches
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.
jemalloc, a general purpose malloc implementation

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.10 GHz, Intel Xeon Gold 5318N)

SPECspeed®2017_fp_base = 209

SPECspeed®2017_fp_peak = 209

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

General Notes (Continued)

built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>

Platform Notes

BIOS Configuration:

VT-d = Disabled

Patrol Scrub = Disabled

Hyper-Threading = Disable

Engine Boost = Aggressive

SR-IOV Support = Disabled

BMC Configuration:

Fan mode = Full speed mode

Sysinfo program /home/ic22ul/bin/sysinfo

Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d

running on localhost.localdomain Thu Nov 24 17:45:29 2022

SUT (System Under Test) info as seen by some common utilities.

For more information on this section, see

<https://www.spec.org/cpu2017/Docs/config.html#sysinfo>

From /proc/cpuinfo

model name : Intel(R) Xeon(R) Gold 5318N CPU @ 2.10GHz

2 "physical id"s (chips)

48 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores : 24

siblings : 24

physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

From lscpu from util-linux 2.32.1:

Architecture: x86_64

CPU op-mode(s): 32-bit, 64-bit

Byte Order: Little Endian

CPU(s): 48

On-line CPU(s) list: 0-47

Thread(s) per core: 1

Core(s) per socket: 24

Socket(s): 2

NUMA node(s): 2

Vendor ID: GenuineIntel

BIOS Vendor ID: Intel

CPU family: 6

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.10 GHz, Intel Xeon Gold 5318N)

SPECspeed®2017_fp_base = 209

SPECspeed®2017_fp_peak = 209

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Platform Notes (Continued)

```

Model: 106
Model name: Intel(R) Xeon(R) Gold 5318N CPU @ 2.10GHz
BIOS Model name: Intel(R) Xeon(R) Gold 5318N CPU @ 2.10GHz
Stepping: 6
CPU MHz: 2697.611
CPU max MHz: 3400.0000
CPU min MHz: 800.0000
BogoMIPS: 4200.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 36864K
NUMA node0 CPU(s): 0-23
NUMA node1 CPU(s): 24-47
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid
aperfmpperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16
xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave
avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 invpcid_single
intel_ppin ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept
vpid ept_ad fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid cqm rdt_a
avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha_ni
avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
cqm_mbm_local split_lock_detect wbnoinvd dtherm ida arat pln pts hwp hwp_act_window
hwp_epp hwp_pkg_req avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid fsrm md_clear pconfig
flush_lld arch_capabilities

```

```

/proc/cpuinfo cache data
cache size : 36864 KB

```

```

From numactl --hardware
WARNING: a numactl 'node' might or might not correspond to a physical chip.
available: 2 nodes (0-1)
node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
node 0 size: 515629 MB
node 0 free: 510318 MB
node 1 cpus: 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
node 1 size: 516088 MB
node 1 free: 511728 MB
node distances:
node 0 1
0: 10 20
1: 20 10

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.10 GHz, Intel Xeon Gold 5318N)

SPECspeed®2017_fp_base = 209

SPECspeed®2017_fp_peak = 209

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Platform Notes (Continued)

From /proc/meminfo

MemTotal: 1056478572 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

/sbin/tuned-adm active

Current active profile: throughput-performance

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has
performance

From /etc/*release* /etc/*version*

os-release:

NAME="Red Hat Enterprise Linux"

VERSION="8.4 (Ootpa)"

ID="rhel"

ID_LIKE="fedora"

VERSION_ID="8.4"

PLATFORM_ID="platform:el8"

PRETTY_NAME="Red Hat Enterprise Linux 8.4 (Ootpa)"

ANSI_COLOR="0;31"

redhat-release: Red Hat Enterprise Linux release 8.4 (Ootpa)

system-release: Red Hat Enterprise Linux release 8.4 (Ootpa)

system-release-cpe: cpe:/o:redhat:enterprise_linux:8.4:ga

uname -a:

Linux localhost.localdomain 4.18.0-305.25.1.el8_4.x86_64 #1 SMP Mon Oct 18 14:34:11

EDT 2021 x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit):

Not affected

CVE-2018-3620 (L1 Terminal Fault):

Not affected

Microarchitectural Data Sampling:

Not affected

CVE-2017-5754 (Meltdown):

Not affected

CVE-2018-3639 (Speculative Store Bypass):

Mitigation: Speculative Store
Bypass disabled via prctl and
seccomp

CVE-2017-5753 (Spectre variant 1):

Mitigation: usercopy/swaps
barriers and __user pointer
sanitization

CVE-2017-5715 (Spectre variant 2):

Mitigation: Enhanced IBRS, IBPB:
conditional, RSB filling

CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected

CVE-2019-11135 (TSX Asynchronous Abort):

Not affected

run-level 3 Nov 24 08:41

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.10 GHz, Intel Xeon Gold 5318N)

SPECspeed®2017_fp_base = 209

SPECspeed®2017_fp_peak = 209

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Platform Notes (Continued)

SPEC is set to: /home/ic22u1

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/rhel-home	xfs	878G	125G	754G	15%	/home

```

From /sys/devices/virtual/dmi/id
Vendor:          ASUSTeK COMPUTER INC.
Product:        RS720-E10-RS12
Product Family: Server
Serial:         012345678901

```

Additional information from dmidecode 3.2 follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

Memory:
16x Samsung M393A8G40AB2-CWE 64 GB 2 rank 3200, configured at 2666

```

BIOS:
  BIOS Vendor:      American Megatrends Inc.
  BIOS Version:    0802
  BIOS Date:       04/29/2022
  BIOS Revision:   8.2

```

(End of data from sysinfo program)

Compiler Version Notes

```

=====
C | 619.lbm_s(base, peak) 638.imagick_s(base, peak)
  | 644.nab_s(base, peak)

```

```

-----
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
-----

```

```

=====
C++, C, Fortran | 607.cactuBSSN_s(base, peak)

```

```

-----
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.10 GHz, Intel Xeon Gold 5318N)

SPECspeed®2017_fp_base = 209

SPECspeed®2017_fp_peak = 209

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Compiler Version Notes (Continued)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

=====
Fortran | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)
| 654.roms_s(base, peak)
=====

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

=====
Fortran, C | 621.wrf_s(base, peak) 627.cam4_s(base, peak)
| 628.pop2_s(base, peak)
=====

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2022.1.0 Build 20220316
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:

icx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

Base Portability Flags

603.bwaves_s: -DSPEC_LP64

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.10 GHz, Intel Xeon Gold 5318N)

SPECspeed®2017_fp_base = 209

SPECspeed®2017_fp_peak = 209

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Base Portability Flags (Continued)

```

607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
-assume byterecl
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64

```

Base Optimization Flags

C benchmarks:

```

-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

```

Fortran benchmarks:

```

-m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

```

Benchmarks using both Fortran and C:

```

-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

```

Benchmarks using Fortran, C, and C++:

```

-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

```

Peak Compiler Invocation

C benchmarks:

icx

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.10 GHz, Intel Xeon Gold 5318N)

SPECspeed®2017_fp_base = 209

SPECspeed®2017_fp_peak = 209

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Peak Compiler Invocation (Continued)

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

619.lbm_s: basepeak = yes

638.imagick_s: basepeak = yes

644.nab_s: basepeak = yes

Fortran benchmarks:

603.bwaves_s: -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX512 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -nostandard-realloc-lhs
-align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib
-ljemalloc

649.fotonik3d_s: basepeak = yes

654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:

621.wrf_s: basepeak = yes

627.cam4_s: -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

ASUS RS720-E10(Z12PP-D32) Server System
(2.10 GHz, Intel Xeon Gold 5318N)

SPECspeed®2017_fp_base = 209

SPECspeed®2017_fp_peak = 209

CPU2017 License: 9016

Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Nov-2022

Hardware Availability: Apr-2022

Software Availability: May-2022

Peak Optimization Flags (Continued)

627.cam4_s (continued):

```
-nostandard-realloc-lhs -align array32byte -auto  
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

628.pop2_s: basepeak = yes

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z12-V1.2.html>

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.2022-10-12.html

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z12-V1.2.xml>

http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.2022-10-12.xml

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEC CPU®2017 v1.1.8 on 2022-11-24 17:45:28-0500.

Report generated on 2023-01-17 18:44:27 by CPU2017 PDF formatter v6442.

Originally published on 2023-01-17.